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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/614,336	07/07/2003	Paul Barnes	STMI08-00002	7883

7590 01/11/2005

Docket Clerk
P.O. Box 802432
Dallas, TX 75380

EXAMINER	
SIEK, VUTHE	
ART UNIT	PAPER NUMBER
2825	

DATE MAILED: 01/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/614,336	BARNES, PAUL	
	Examiner	Art Unit	
	Vuthe Siek	2825	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *07 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-16,18-26 and 28-38* is/are rejected.

7)☒ Claim(s) *17 and 27* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 December 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This office action is in response to application 10/614,336 filed on 7/7/2003. Claims 1-38 remain pending in the application.

Oath/Declaration

2. The oath or declaration is defective. A new oath or declaration in compliance with 37 CFR 1.67(a) identifying this application by application number and filing date is required. See MPEP §§ 602.01 and 602.02.

The oath or declaration is defective because: Citizenship of the inventor is missing.

Claim Objections

3. Claim 1, 6, 17, 20, 25 and 36 are objected to because of the following informalities: claim 1, line 8, after "not met;" insert –and--; claim 6, line 1, change "claim 1" to –claim 2--; claim 17, line 1, change "claim 13" to –claim 16--; claim 20, line 8, after "not met;" insert –and--; claim 25, line 1, change "claim 20" to –claim 21--; claim 36, line 1, change "claim 32" to –claim 35--. The proposed changes correct minor informalities and provide proper claim dependency in order to further provide proper claim antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-4, 9-12, 20-24 and 29-32 are rejected under 35 U.S.C. 102(a/e) as being anticipated by Usami et al. (6,493,856).

6. As to claims 1 and 20, Usami et al. teach a computer program product for a method of replacing standard cells with high speed cells in LSI design (could be ASIC) by identifying timing violation of paths (Fig. 4A) and replacing cells with cells having high speed during performing automatic timing analysis in order to eliminate timing violations (Fig. 4B), thereby entire LSI design can operate at high speed (at least see summary, col. 4, Figs. 3-10 and its description).

7. As to claims 2-4, 9-12, 21-24 and 29-32, Usami et al. teach replacement of cells with cells with high speed on plurality of paths (first set of paths) of LSI design in order to eliminate timing violations to thereby entire LSI design can operate at high speed (Fig. 4). Thus, this would suggest the claimed limitations of determining a first set of paths having predetermined number of paths with timing violations (slowest timing), registers (at inputs and outputs) (Figs. 4), where the first set of paths are determined from a second set of paths (from set of paths within LSI of Fig. 4A).

8. Claims 1-16, 18-26 and 28-38 are rejected under 35 U.S.C. 102(a/e) as being anticipated by Mallick et al. (6,427,226).

9. As to claims 1 and 20, Mallick et al. teach a method and techniques used for replacing standard cells with high speed cells in ASIC design comprising timing plurality of paths; identifying cells on paths for which timing targets are not met (paths having timing constraints violation, col. 5); and replacing at least one of the identified cells with a cell with high speed (col. 7) (Fig. 1-3 and its description, col. 4 line 60 to col. 7 line 37).

10. As to claims 2-16, 18-19, 21-26 and 28-38 Mallick et al. teach replacement of cells with cells with high speed on paths by selecting a subset of paths from numerous paths and sorting paths in the subset according to timing violations (ranking) by taking consideration of setup time and hold timing violations (transitions) (col. 6). The plurality of paths in subset of paths comprising first set of paths and second set of paths. The ASIC as taught by Mallick et al. includes a plurality of end points at which the paths terminate, where the paths comprising registers at inputs and outputs.

11. Claims 1-16, 18-26 and 28-38 are rejected under 35 U.S.C. 102(b) as being anticipated by Teen (6,272,668).

12. As to claims 1 and 20, Teene teaches similar claimed limitations of improving timing performance of standard cell ASIC layout design by timing a plurality of paths and replacing cells with cells with high speed on identified having timing constraint violations (Figs. 3-7 and its description, summary, col. 9 performing static timing analysis, starting col. 10 performing cell replacement or cell swapping).

13. As to claims 2-16, 18-19, 21-26 and 28-38, Teene teaches similar claimed limitations of sorting list of timing paths according to timing slack values to thereby

performing cell replacement in order to improve timing performances. The ASIC comprising a plurality of paths having registers at inputs and outputs (Figs. 3-7 and its description, summary, col. 15-18).

Allowable Subject Matter

14. Claims 17 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The prior art does not teach that the second set of paths is changed to comprise an increased number of paths per endpoint if the number of paths in the first set of paths is greater than the number of paths for which timing targets are not met. Note that applicant is requested to explain and point out where the specification teaches that limitation.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vuthe Siek whose telephone number is (571) 272-1906. The examiner can normally be reached on Increase Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Smith can be reached on (571) 272-1907. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Vuthe Siek